

7

surface of the first casing **1**. When the second casing **3** slides forward with respect to the first casing **1** to a predetermined position, the rotary hinge **24** of the turning means **23** generates rotation torque as described in the first embodiment, so that the turning member **25** automatically turns to slide the second casing **3** in an opening direction to thereby automatically open and lock it in the open state. FIG. 13 shows this state.

To close the second casing **3** opened, when the second casing **3** is pushed to a closing direction (a direction of this side), the second casing **3** slides and begins to cover the top surface of the first casing **1** in the operation reverse to that when it is opened, and rotation torque is generated on the rotary hinge **24** immediately before complete coverage as described in the first embodiment, whereby the turning member **25** is turned in the anticlockwise direction to push the second casing **3** to automatically close and lock it.

The cellular phone in the second embodiment can be formed neater in external appearance than that in the first embodiment because the slide means **20** and the turning means **23** are hidden behind the second casing **3** though the second casing **3** in the second embodiment when slid in the opening direction cannot be brought into an inclined state with its tip side raised upward unlike the first embodiment.

Note that the case in which the present invention is applied to a cellular phone has been described in the above explanation, but it is needless to say that the slide hinge according to the present invention can be embodied as it is also when slidably linking a first casing and a second casing of another small-sized information terminal such as PHS, PDA, or the like.

Since the first casing and the second casing are linked to be mutually linearly slidable by the slide means, and they are rotated accompanying the operation of the slide means and forced to slide from predetermined slide positions in an opening direction and/or a closing direction by the turning means generating rotation torque from a predetermined rotation angle and locked in an open state or a closed state, the present invention can improve the operability as well as reduce the size of information terminals and is thus preferably used in small-sized information terminals, in particular, a cellular phone.

8

What is claimed is:

1. A slide hinge for a small-sized information terminal in which a first casing provided with a keyboard portion and a second casing provided with a display portion are relatively slid, said slide hinge comprising:

a linear slide means provided between the first casing and the second casing; and

a turning means for performing a turning operation accompanying linear slide operations of the first casing and the second casing by said slide means;

said slide means composed of guide grooves provided on both side portions of said second casing, fixing members attached to substantially central parts on both sides of said first casing in such a manner as to protrude upward, and first guide pins engaged with said guide grooves and attached to free end portions of said fixing member;

said turning means composed of rotary hinges provided at the end of both side portions so as to generate rotation torque from a predetermined turning angle, wherein turning members are attached to said rotary hinges in one end portion thereof, and second guide pins are attached to both free end portions of said turning members and engaged with each one of said guide grooves.

2. The slide hinge for a small-sized information terminal according to claim 1,

wherein said rotary hinge is configured so as to generate rotational torque from a predetermined turning angle, while said second casing is slid with respect to said first casing, and then a tip side of said second casing is raised, and automatically opened from the first casing up to a predetermined angle.

3. The slide hinge for a small-sized information terminal according to claim 1,

wherein said guide groove has a c-channel form of a cross-section.

* * * * *